

Perbandingan Performa Diagnostik Antara ACR-TIRADS dan Kombinasi ACR-TIRADS dengan *Resistance Index* Pada Lesi Tiroid Curiga Ganas

Abdi Marang Gusti Alhaq¹, Arif Faisal², Wigati Dhamiyati²

¹Magister Ilmu Kedokteran Klinis dan ²Departemen Radiologi

Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan

Universitas Gadjah Mada

Yogyakarta, Indonesia

INTISARI

Latar Belakang : Ultrasonografi (USG) merupakan lini pertama dalam evaluasi nodul tiroid. ACR-TIRADS terbukti sensitif namun kurang spesifik dalam membedakan nodul jinak dan ganas. Resistance Index (RI) dan pola vaskular menawarkan spesifisitas yang lebih tinggi, namun sensitifitasnya rendah. Penelitian ini bertujuan untuk mengevaluasi apakah kombinasi ACR-TIRADS dengan RI dan pola vaskular dapat meningkatkan performa diagnostik dalam evaluasi nodul tiroid curiga ganas.

Metode : Penelitian uji diagnostik komparatif membandingkan metode ACR-TIRADS dengan metode kombinasi ACR-TIRADS dan RI, serta kombinasi ACR-TIRADS dan pola vaskular. Penelitian dilakukan secara *cross-sectional* di RSUP Dr. Sardjito Yogyakarta periode November 2023 hingga April 2024. Interpretasi dilakukan oleh dua observer dengan minimal pengalaman 4 tahun. Reliabilitas inter-observer diuji dan performa diagnostik dievaluasi dengan baku emas histopatologi.

Hasil: Sebanyak 82 subjek penelitian dilibatkan. Reliabilitas inter-observer menunjukkan koefisien *intraclass* sebesar 0.83. Performa diagnostik ACR-TIRADS sendiri menunjukkan sensitivitas 100,0%, spesifisitas 60,9%, NPN 100,0%, NPP 41,8%, akurasi 69,5%. Kombinasi ACR-TIRADS dan RI menunjukkan sensitivitas 100,0%, spesifisitas 89,0%, NPP 72,0%, NPN 100,0%, akurasi 91,4%. Kombinasi ACR-TIRADS dan pola vaskular menunjukkan sensitivitas 100,0%, spesifisitas 95,3%, NPP 85,7%, NPN 100,0%, akurasi 96,3%.

Kesimpulan: Penambahan fitur RI atau pola vaskular ke dalam analisis ACR-TIRADS dapat meningkatkan spesifisitas dari pemeriksaan USG Tiroid, sehingga berpotensi membantu dalam diagnosis nodul tiroid yang lebih akurat.

Kata Kunci : Nodul Tiroid, ACR-TIRADS, Resistive Index, Pola Aliran Vaskular



A Comparative Analysis of ACR-TIRADS Alone versus ACR-TIRADS Combined with Resistance Index

Abdi Marang Gusti Alhaq¹, Arif Faisal², Wigati Dhamiyati²

¹Master Program in Clinical Medicine, ²Radiology Department

Faculty of Medicine, Public Health and Nursing

Universitas Gadjah Mada

Yogyakarta, Indonesia

ABSTRACT

Background: Ultrasonography (US) is the first-line modality for thyroid nodule evaluation. ACR-TIRADS has demonstrated high sensitivity but low specificity in differentiating benign from malignant nodules. Resistance Index (RI) and vascular pattern offer higher specificity but lower sensitivity. This study aimed to evaluate whether combining ACR-TIRADS with RI and vascular pattern can improve diagnostic performance in suspicious thyroid nodule evaluation.

Methods: This comparative diagnostic test study compared the ACR-TIRADS method alone with the combination of ACR-TIRADS and RI, and ACR-TIRADS and vascular pattern. The study was conducted at Dr. Sardjito General Hospital, Yogyakarta, Indonesia, from November 2023 to April 2024. Two observers with at least 4 years of experience interpreted US examinations. Inter-observer reliability was assessed, and diagnostic performance was evaluated with pathology anatomy as the gold standard.

Result : A total of 82 subjects were enrolled. Inter-observer reliability showed a intra-class coefficient of 0.83. The diagnostic performance of ACR-TIRADS alone demonstrated a sensitivity of 100.0%, specificity of 60.9%, NPV of 100.0%, PPV of 41.8%, and accuracy of 69.5%. The combination of ACR-TIRADS and RI showed a sensitivity of 100.0%, specificity of 89.0%, PPV of 72.0%, NPV of 100.0%, and accuracy of 91.4%. The combination of ACR-TIRADS and vascular pattern showed a sensitivity of 100.0%, specificity of 95.3%, PPV of 85.7%, NPV of 100.0%, and accuracy of 96.3%.

Conclusion : Incorporating RI or vascular pattern features into ACR-TIRADS analysis can significantly enhance the specificity of thyroid US, potentially aiding in more accurate thyroid nodule diagnosis.

Keywords: Thyroid Nodule, ACR-TIRADS, Resistance Index, Vascular Pattern